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**Economic, Transportation, and Environmental Benefits of Living Snow  
Fences**

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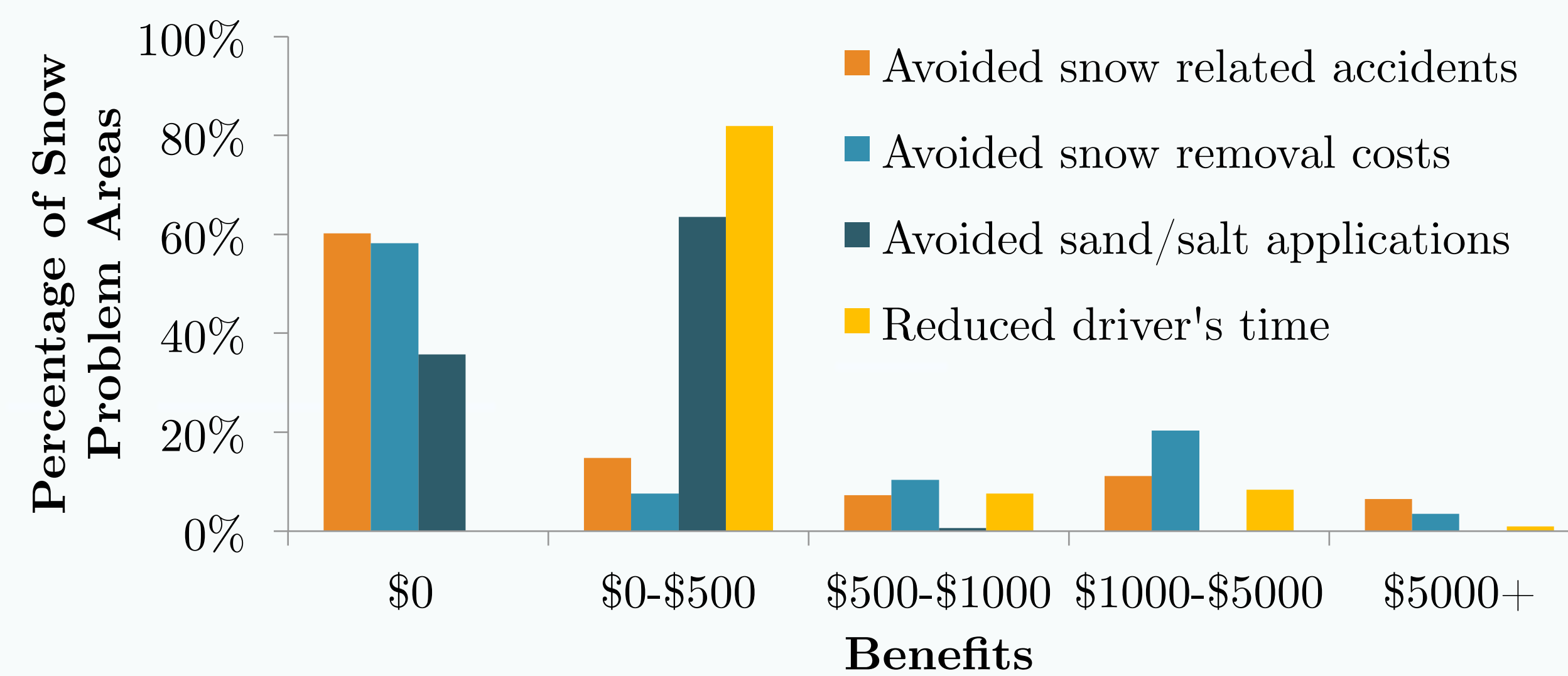
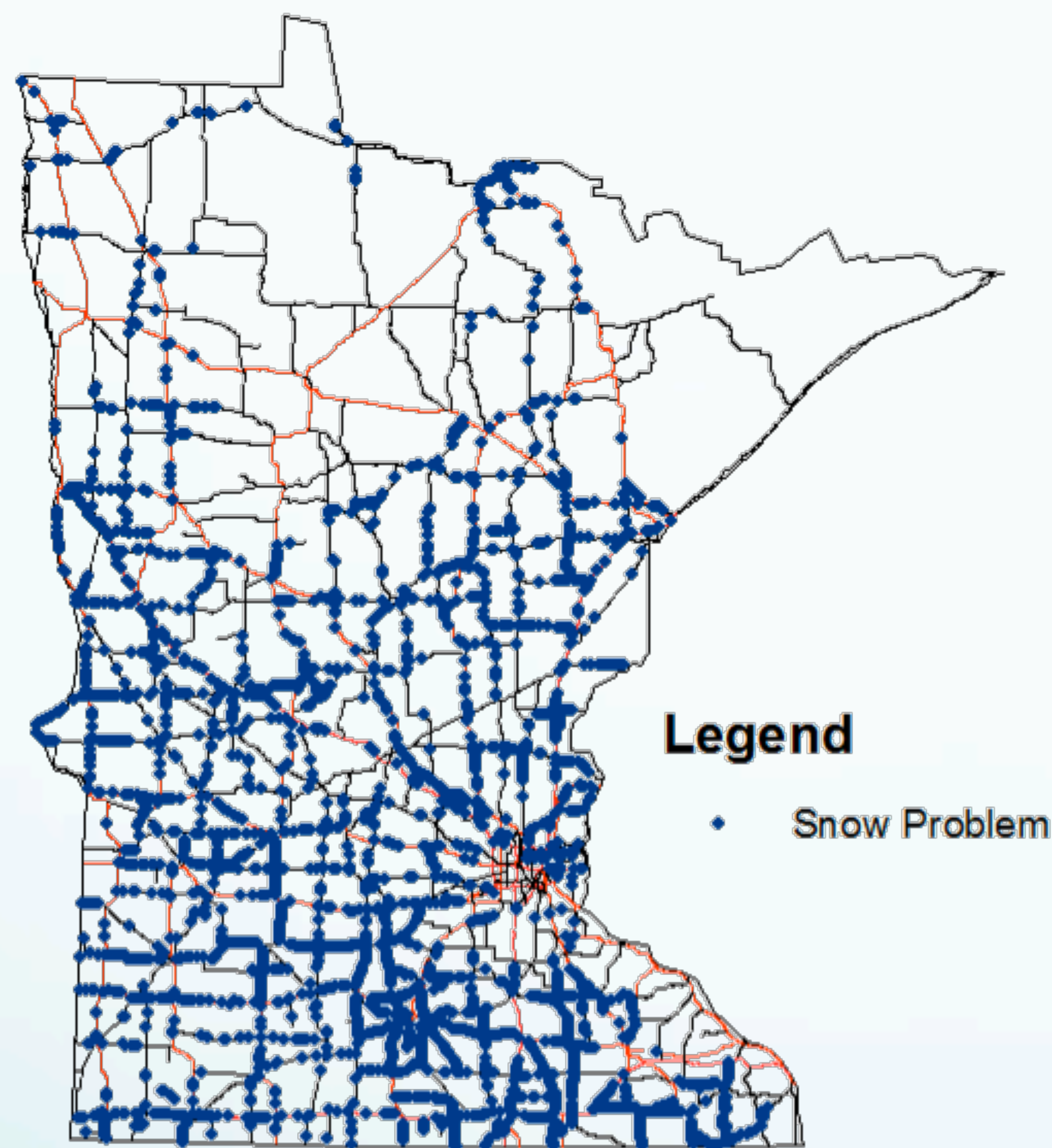
# Economic, Transportation and Environmental Benefits

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**Introduction:** The Minnesota Department of Transportation's (MnDOT) living snow fence (LSF) program was implemented to mitigate the drifting and blowing snow problems associated with nearly four thousand snow problem areas identified by field surveys in Minnesota (Figure 1). The Center for Integrated Natural Resources and Agricultural Management conducted a benefit and costs analysis of the program.

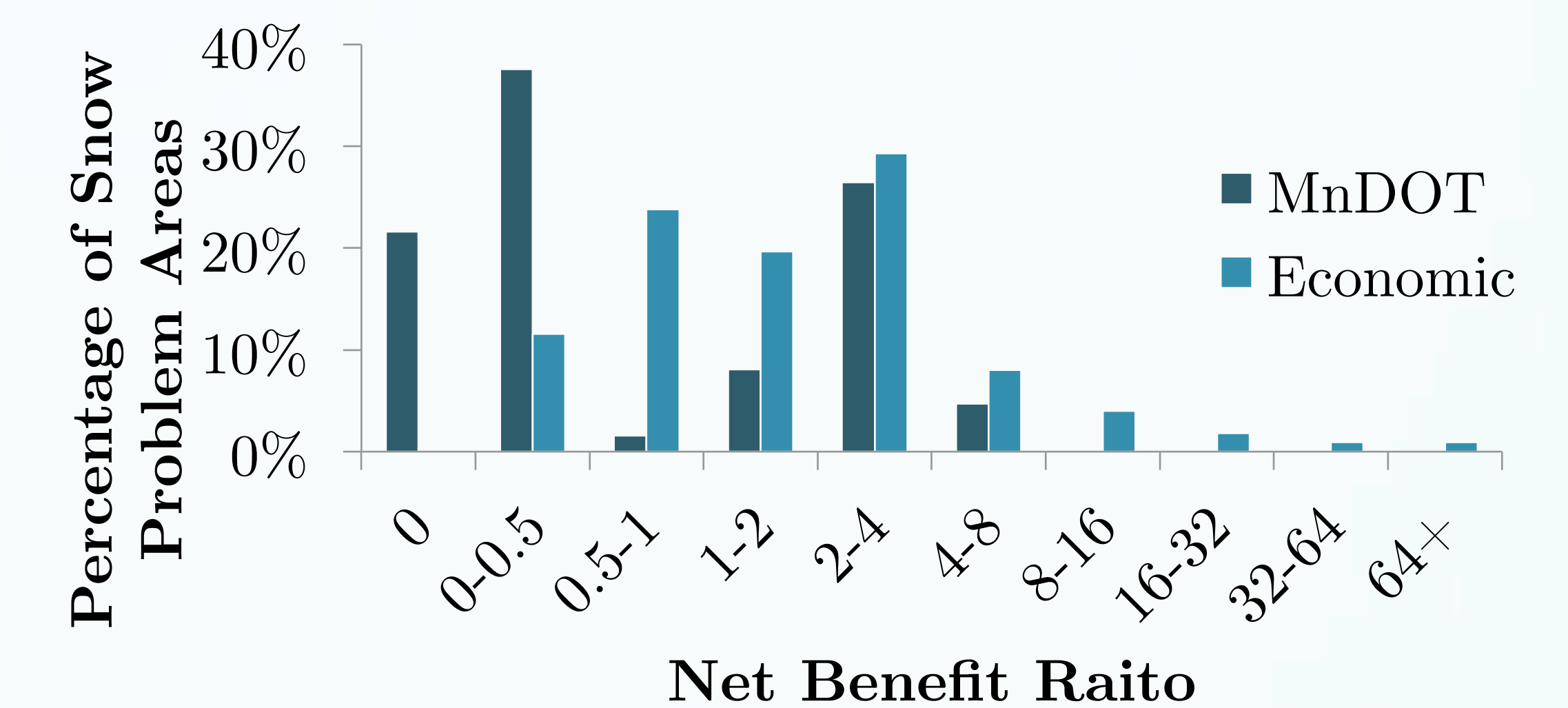
Figure 1: Snow Problem Areas



**Benefits:** These result from cost savings to the responsible transportation agency (e.g. reduced equipment, sand, and salt use) and transportation benefits for the public (e.g. decreased travel time and number and severity of accidents). In addition LSFs also provide environmental services such as wildlife conservation, hunting opportunities, and carbon storage and sequestration.

The benefit and cost analysis suggests an expansion of the program in the study agency and to other states with high snow precipitation.

Net Benefits \$14 Million

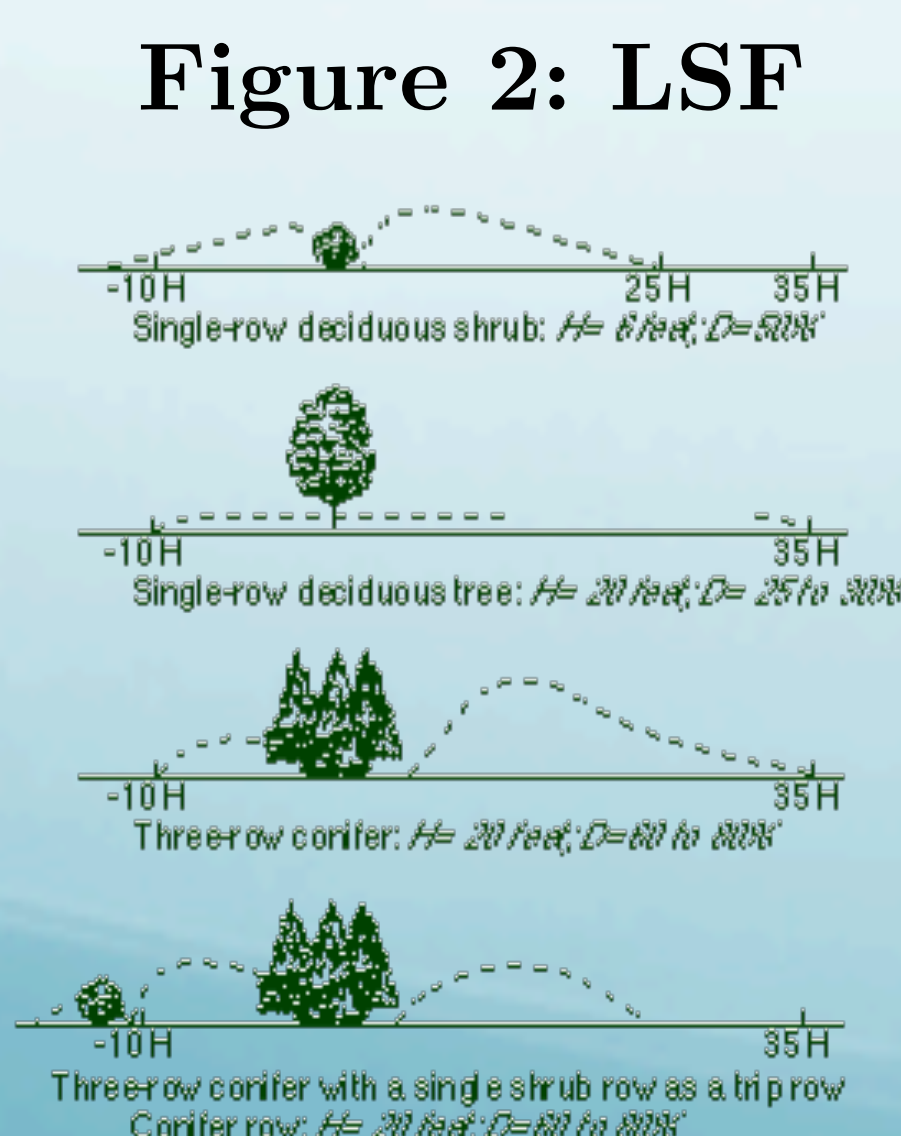


**Coordination with Conservation Agencies:** Coordinating the LSF program with the Conservation Reserve Program (CRP) and the Environmental Quality Incentives Problem (EQIP) provides additional resources that can reduce the transportation agency's share of the landowner payments. This lowers financial and technical barriers to development and expansion of a program with substantial economic net benefits.

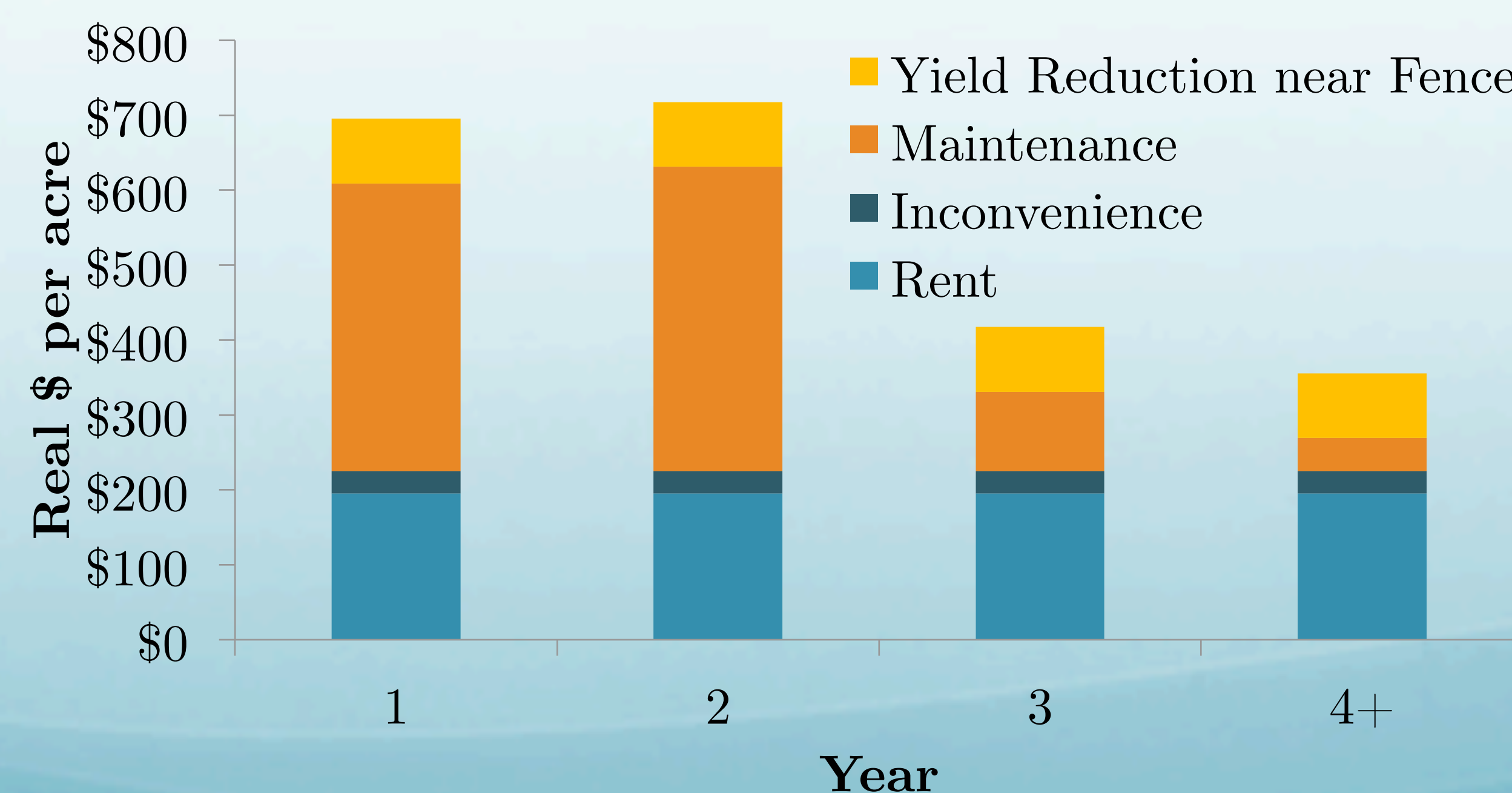


Center for Integrated Natural Resources & Agricultural Management

**Solution:** LSFs are plantings of trees and/or shrubs set back from the right of way along the upwind roadside to minimize drifting and blowing snow.



Costs



Establishment: \$2261/acre

## Future Research

- Quantify Environmental Services of LSF
- Statistical Analysis of Accident Data
- Ecosystem Service Value of Scrubland & Forestland